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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/700.558

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Youhei Toyoshima

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EXAMINER

LUKS, JEREMY AUSTIN

ART UNIT

PAPER NUMBER

2837

DATE MAILED: 07/12/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>		<b>Applicant(s)</b>	
	10/700,558		TOYOSHIMA, YOUHEI	
	<b>Examiner</b>		<b>Art Unit</b>	
	Jeremy Luks		2837	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 08 June 2006.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 17-28 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 17-28 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)             | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)    | Paper No(s)/Mail Date: _____  |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date: _____  | 6) <input type="checkbox"/> Other: _____                                    |

## **DETAILED ACTION**

### ***Claim Objections***

1. Claim 27 objected to because of the following informalities: In the third line, the claim states "the closed end of second first of the two." This limitation should read "the closed end of the second of the two". Appropriate correction is required.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 17 and 26 rejected under 35 U.S.C. 102(b) as being anticipated by Uegane (2001/0018995). Uegane teaches an outer muffler shell (Figure 2, #21); a first exhaust tube (14); a tubular member (32) formed inside the muffler shell (21), wherein a first end of the tubular member (32) is in fluid communication with the first exhaust tube, wherein a second end of the tubular member (32) is in fluid communication with a space (29, 30, 31) inside of the muffler shell (21), and wherein the tubular member (32) is configured to attenuate acoustic energy of a first frequency band (Page 2, [0034]); a resonator set (30, 31) that forms of a portion (32a) of the tubular member (32), wherein the resonator set (30, 31) is configured to attenuate acoustic energy of a second frequency band (Page 2, [0034]), which is different from the first frequency band and which modulates the first frequency band; and a second exhaust tube (33) configured to

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discharge exhaust in the space (29, 30, 31) inside the muffler shell (21) to the atmosphere (15), and extending into the space (29, 30, 31) inside the muffler shell (21).

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 18, 20 and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Uegane (2001/0018995) in view of Bourne (2,297,046). Uegane teaches wherein the tubular member (Figure 2, #32) is arranged at an upstream end (22, Examiner is referring the upstream end of the muffler in which #22 is situated) of the muffler (26) in a direction of exhaust flow; and the resonator set (30, 31) is arranged on a front end plate (24) of the muffler shell (21). Uegane fails to teach wherein the resonator set comprises at least two resonators, and wherein each of the resonators has a first end opening to an inner face of a tubular member and a closed second end, and a distance between the closed end of a first of the two resonators and the tubular member differs from a distance between the closed end of the second of the two resonators and the tubular member. Bourne teaches a resonator set comprising at least two resonators (Figure 9, #31, 32), and wherein each of the resonators has a first end opening (33, 34) to an inner face of a tubular member (30) and a closed second end, and a distance between

the closed end of a first (31) of the two resonators and a tubular member (30) differs from a distance between the closed end of the second (32) of the two resonators and the tubular member (30). It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the apparatus of Uegane, with the apparatus of Bourne for use in short conduits where the production of higher harmonics by shock excitation is unlikely or unimportant.

4. Claims 19, 21 and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Uegane (2001/0018995) in view of Coulon (GB 2 365 066 A). Uegane teaches wherein the resonator set (Figure 2, #30, 31) is arranged on a front end plate (34) of the muffler shell (21) and comprises at least one resonator (31). Uegane fails to teach wherein the resonator has a first end opening to an inner face of the tubular member and a closed second end, and wherein a plane defined by the closed second end is not parallel to a plane defined by the first end, and a distance between a first end of the closed end of the resonator and the tubular member differs from a distance between a second end of the closed end of the resonator and the tubular member. Coulon teaches a resonator (Figure 10, #26) having a first end opening to an inner face of a tubular member (10) and a closed second end, and wherein a plane defined by the closed second end is not parallel to a plane defined by the first end, and a distance between a first end (left side of resonator #26) of the closed end of the resonator (26) and the tubular member (10) differs from a distance between a second end right side of resonator #26) of the closed end of the resonator (26) and the tubular member (10). It would have been obvious to one of ordinary skill in the art at the time of the invention to

combine the apparatus of Uegane, with the apparatus of Coulon to accommodate the significant pressure and temperature increases from a turbo-charged engine, while maintaining an effective level of noise suppression.

5. Claims 19, 21 and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Uegane (2001/0018995) in view of Burdisso (6,112,514). Uegane teaches wherein the resonator set comprises at least one resonator (Figure 2, #30, 31). Uegane fails to teach wherein each of the resonators is open to an inner face of the tubular member. Burdisso teaches a resonator (Figure 1, #10) open to an inner face of the tubular member (12). It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the muffler of Uegane with the resonator set of Burdisso to divide the inlet acoustic energy, then reintroduce the energy into the engine compartment, where the sound waves will be out of phase with one another, and canceling the remaining acoustic energy produced by the engine, also known as phase cancellation.

6. Claim 23 is rejected under 35 U.S.C. 103(a) as being unpatentable over Uegane (2001/0018995) in view of Bourne (2,297,046) as applied to Claim 18 above, and further in view of De Lank (EP 0445431). Uegane and Bourne are relied upon for the reason and disclosures set forth above. Uegane and Bourne fail to describe an absorbing material and scatter preventative part for use in a resonator. Nevertheless, De Lank discloses an absorbing material (Figure 1, #5) and scatter preventative part (2) for use in a resonator.

It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the muffler of Uegane as modified, with the noise absorbing material and scatter prevention part of De Lank to increase the noise absorption coefficient of the resonator set, and protect said noise absorption material from becoming dislodged, while still allowing gasses to enter the resonator set.

7. Claim 24 is rejected under 35 U.S.C. 103(a) as being unpatentable over Uegane (2001/0018995) in view of Coulon (GB 2 365 066 A) as applied to Claim 19 above and further in view of De Lank (EP 0445431). Uegane and Coulon are relied upon for the reason and disclosures set forth above. Uegane and Coulon fail to describe an absorbing material and scatter preventative part for use in a resonator. Nevertheless, De Lank discloses an absorbing material (Figure 1, #5) and scatter preventative part (2) for use in a resonator. It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the muffler of Uegane as modified, with the noise absorbing material and scatter prevention part of De Lank to increase the noise absorption coefficient of the resonator set, and protect said noise absorption material from becoming dislodged, while still allowing gasses to enter the resonator set.

8. Claim 25 is rejected under 35 U.S.C. 103(a) as being unpatentable over Uegane (2001/0018995) in view of Burdisso (6,112,514) as applied to Claim 22 above and further in view of De Lank (EP 0445431). Uegane and Burdisso are relied upon for the reason and disclosures set forth above. Uegane and Burdisso fail to describe an absorbing material and scatter preventative part for use in a resonator. Nevertheless, De Lank discloses an absorbing material (Figure 1, #5) and scatter preventative part (2)

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for use in a resonator. It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the muffler of Uegane as modified, with the noise absorbing material and scatter prevention part of De Lank to increase the noise absorption coefficient of the resonator set, and protect said noise absorption material from becoming dislodged, while still allowing gasses to enter the resonator set.

### ***Response to Arguments***

9. Applicant's arguments with respect to claims 17-28 have been considered but are moot in view of the new ground(s) of rejection. The Examiner feels that the obvious combination of the references cited herein teach all of the limitations as claimed by Applicant.

### ***Conclusion***

10. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of



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the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jeremy Luks whose telephone number is (571) 272-2707. The examiner can normally be reached on Monday-Thursday 8:30-6:00, and alternating Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lincoln Donovan can be reached on (571) 272-1988. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Jeremy Luks  
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Art Unit 2837

  
LINCOLN DONOVAN  
SUPERVISORY PATENT EXAMINER